

Name: Grunblatt, Samuel
Education Institution: Columbia University
Major/Degree/Grad Year: Astrophysics/BA/2013
NASA MSFC Mentor: Chryssa Kouveliotou
Org Code/Division or Branch: VP62



Research and Experience

- **"Reevaluating the Period of Variable Star RXJ1039-05" with Prof. Joseph Patterson (Summer 2011, ongoing)**
 - Using Center for Backyard Astronomy (CBA) database of observations between 2003 and 2011
- **GECO Gravitational Wave Laboratory Researcher under Prof. S. Marka (Summer 2010)**
 - Wrote "On the Horizon Limits for Detection of Gravitational Waves from a Pulsar Kick." Presented at AAS Meeting #217, #432.16.
<http://adsabs.harvard.edu/abs/2011AAS...21743216G> (January 2011)
- **Support Astronomer, MDM Observatory, Kitt Peak, AZ, under Prof. Joseph Patterson (05/17/10—05/29/10, 01/03/11—01/08/11, 03/10/11—03/15/11)**
 - Observed multiple cataclysmic variable stars, created lightcurves and submitted to the CBA database
- **Independent Research, "Creation of an H-R Diagram from the R-V Color of Stars in NGC 7790." (May 2009)**
 - Created H-R Diagram using IRAF image analysis

Membership and Activities

- The American Physical Society (APS)
- Society of Physics Students (SPS)
- American Astronomical Society (AAS)
- Columbia Astronomy Outreach
- Redshift—Columbia's undergraduate astronomy club
- Columbia Kingsmen—a cappella
 - Music Director, 5/2011—
- Columbia University Ski Club

Honors and Awards

- Dean's List, Columbia College, Spring 2010
- National Merit Finalist, 2008-9
- National AP Scholar, 2009
- Salutatorian, Kingston High School, Class of 2009
- TAP Award for Academic Excellence, 2009
- Recipient of The Harvard Book from the Harvard-Radcliffe Club of the Hudson Valley, 2008
- Awarded one free course at Vassar College via Center for Talented Youth, Fall 2008
- Outstanding Achievement on National German Exam, 2006—2009 (4x)
- Honorable Mention at Essentially Ellington Finalist Competition, May 2009

- Performed at Carnegie Hall with National Youth Choir, March 2009

Title of Poster: Time Resolved Spectroscopy of Bright Bursts from the Soft Gamma Repeater SGR J1550-5418

Abstract:

Magnetars, slowly rotating neutron stars with tremendous magnetic fields ($>10^{15}$ Gauss), are some of the most extreme objects in our Universe. Less than twenty of these objects have been discovered to date. The sources are dormant most of their lifetimes, but become randomly active, emitting multiple soft gamma-ray (SGR) bursts. Here we present our results from spectral analysis of bursts from SGR J1550-5418 emitted during a burst active episode between 2009 January 22 - 29. We have analyzed all bursts recorded with the Gamma-ray Burst Monitor (GBM) on board the Fermi Observatory with a photon flux greater than 5×10^{-6} erg/s/cm² or a fluence greater than 10^{-6} erg/cm² in the 8-200 keV energy range. We fit the time-integrated and time-resolved spectra of these bursts with Comptonized, optically thin thermal bremsstrahlung (OTTB), and double black body theoretical models. Here we present the distributions of the temperature, peak energy, and surface area of emission derived using these models and discuss how these data will help us better understand the emission mechanism of SGR bursts.